

Appl. No. 10/688,145
Amdt. dated 6/21/06
Reply to Office Action of 2/22/06

PATENT
Docket: 030349

REMARKS

Claims 1-26 are pending in the present application. Claims 1-26 have been examined and stand rejected. In the above amendments, claims 1, 9-11, 13-16 and 26 have been amended. Therefore, after entry of the above amendments, claims 1-26 will be pending in this application. Applicant believes that the present application is now in condition for allowance, which prompt and favorable action is respectfully requested.

Objected to Claims 9 and 10

Claims 9 and 10 are objected to because the versions of the standards are not recited in the claims. Claims 9 and 10 have been amended to recite the applicable versions of the standards. The objection to claims 9 and 10 should thus be withdrawn.

Rejection of Claims 1, 3, 4, 11, 13-16, 21, 22 and 26 Under 35 U.S.C. §102(b)

Claims 1, 3, 4, 11, 13-16, 21, 22 and 26 stand rejected under 35 U.S.C. §102(b) as being anticipated by Nakamura *et al* (U.S. Publication No. 2002/0136278).

Nakamura describes a receiver apparatus with a despreader 201 having multiple fingers 201₁ to 201_n. A searcher detects multipath and provides the timing of each path to fingers 201₁ to 201_n. Each finger processes a different path, as is normally done for a rake receiver. Within each finger, a despreader 201a processes a receive signal with units 301 and 302 to obtain data for a DPCCH and further processes the received signal with units 303 and 304 to obtain data for a DPDCH. A summer 201e sums the DPDCH data from all fingers 201₁ to 201_n. A summer 201f sums the DPCCH data from all fingers 201₁ to 201_n. Summers 201e and 201f each combine data for one code channel across all fingers.

Claim 1 of the present invention, as amended, recites:

"An integrated circuit comprising:
a despreading unit operative to despread input samples and provide despread symbols for a first code channel with a first spreading factor;
a channel compensation unit operative to multiply the despread symbols with channel estimates and provide demodulated symbols for the first code channel; and
a symbol combiner operative to combine groups of demodulated symbols for at least two symbol periods of the first code channel to obtain recovered data symbols for a second

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code channel with a second spreading factor that is an integer multiple of the first spreading factor."

Applicant submits that claim 1 is not anticipated by Nakamura. In particular, Nakamura does not disclose "a symbol combiner operative to combine groups of demodulated symbols for at least two symbol periods of the first code channel to obtain recovered data symbols for a second code channel with a second spreading factor that is an integer multiple of the first spreading factor," as recited in claim 1.

First, Nakamura does not combine groups of demodulated symbols for the first code channel to obtain recovered data symbols for the second code channel. Nakamura combines symbols of the same code channel across different fingers. As shown in FIG. 1, summer 201e combines symbols for the DPDCH across fingers 201₁ to 201_n, and summer 201f combines symbols for the DPCCH across fingers 201₁ to 201_n. This is standard rake receiver processing. Nakamura does not combine symbols for one code channel to obtain symbols for another code channel.

Second, Nakamura does not "combine groups of demodulated symbols for at least two symbol periods of the first code channel". Nakamura combines symbols across fingers, and not across symbol periods.

With regard to claim 5, the rejection indicates that Fitton *et al* (U.S. Publication No. 2004/0017843), in paragraph 0243, teaches "wherein the symbol combiner is operative to combine groups of two demodulated symbols." Paragraph 0243 describes STTD in which two symbols (of a given spreading factor SF) are sent from two antennas in two symbol periods. A receiver obtains two received symbols (for spreading factor SF) and combines these two received symbols in different manners to obtain two STTD demodulated symbols (also for spreading factor SF). (See equation (4) of the present application, which shows STTD demodulation.) The received symbols being combined for STTD have the same spreading factor as the resultant demodulated symbols.

In contrast, claim 1 recites combining demodulated symbols for a first spreading factor to obtain recovered data symbols for a second spreading factor that is multiple times the first spreading factor. This "partial" demodulation is not described by Nakamura or Fitton and may provide certain advantages such as reduced number of multiplications, as disclosed in the present application.

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For at least the above reasons, Applicant submits that claim 1 is not anticipated by Nakamura and is further patentable over Nakamura in view of Fitton.

Independent claims 11, 13, 14 15, 16 and 26 have each been amended to recite the features noted above for claim 1. Claims 3 and 4 are dependent on claim 1, and claims 21 and 22 are dependent on claim 16. These claims are not anticipated by Nakamura and are also patentable over Nakamura in view of Fitton for at least the reasons noted for claim 1.

Accordingly, the §102(b) rejection of claims 1, 3, 4, 11, 13-16, 21, 22 and 26 should be withdrawn.

Rejection of Claims 2, 5-10, 12, 17-20 and 23-25 Under 35 U.S.C. §103(a)

Claims 2, 5-10, 12, 17-20 and 23-25 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Nakamura in view of various other references. The rejection indicates that Nakamura discloses the features of base claims 1, 11, 13, 14 15, 16 and 26, and that the other references disclose the additional features of dependent claims 2, 5-10, 12, 17-20 and 23-25.

Nakamura does not disclose all of the elements of base claims 1, 11, 13, 14 15, 16 and 26, as discussed above. Hence, Nakamura is an insufficient basis for the §103(a) rejection of dependent claims 2, 5-10, 12, 17-20 and 23-25.

Accordingly, the §103(a) rejection of claims 2, 5-10, 12, 17-20 and 23-25 should be withdrawn.

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CONCLUSION

In light of the amendments contained herein, Applicant submits that the application is in condition for allowance, for which early action is requested.

Please charge any fees or overpayments that may be due with this response to Deposit Account No. 17-0026.

Respectfully submitted,

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